

## OPERATIONAL SEQUENCE FOR THE DIGIFORCE®

Before taking a reading ascertain if the wire/cable is ferrous or stainless steel. If it is stainless attach the responder (bulldog clip) to the wire/cable. Digiforce® does not operate with consistent accuracy on wire/cables of less than 3m. The optimum length is 5m.

1. Press **ON**....display reads **LOG?** This is offering the option to log the following reading.  
If **YES** press → If **NO** press ←
2. If **YES**....display reads **ENTER ID No**  
Using the backspace key enter any number between 0000 and 9999. Up to 500 entries can be logged. The user has the option to use the same ID No as many times as required. Press → to accept. Display will now read **ENTER LENGTH**  
  
If **NO**....display reads **ENTER LENGTH xx.xxm**  
Using the backspace key enter the length between fixed node-points in metres (e.g. 09.20). Press →
3. Display reads....**ENTER WEIGHT xxxxg/m**  
Using the backspace key enter the weight in grams/metre (e.g. 0134). This data should be obtained from your wire/cable supplier. A look-up chart for some of the more common wires is supplied with the set. Press →
4. Display reads....**PRESS 5 TO SAMPLE**  
  
User holds the DIGIFORCE® so that the hexagon shaped stainless fixture at the front end is within 25mm of the wire/cable (or responder). Lightly strike the wire/cable and press key **5** on the panel.  
The display will read **SAMPLING NOW**

### Tips:

#### **Hold the unit as steady as possible for optimum accuracy.**

We recommend that the operator knows the approximate range of the tension in the wire/cable and that at least two readings are taken. If the unit is moved whilst sampling a false frequency and tension will be displayed. This will be much higher than the value expected.

5. If the reading is calculated successfully by the DIGIFORCE® the display will give a frequency reading xx.xxxHz and after a short time give the tension xx.xxkN. This reading is held until → is pressed.  
  
If YES was selected in 1 above the display reads measured value and asks do you wish to **LOG?**  
YES = → NO = ←  
If YES is selected the measured value will be stored in the data logger and the display will revert to Item 1 above to enable the next measurement to be taken.  
If NO is selected the display will revert to Item 1 above.  
NOTE: if NO is selected at "switch on" - see 1 above, the LOG option is not available and the display will revert to Item 1 above after the reading has been displayed.
6. If the reading has not been calculated successfully the display will read.....  
**PLEASE SAMPLE AGAIN** followed by **PRESS 5 TO SAMPLE**. Strike the cable again as from 4 above.

If the DIGIFORCE is unable to read and display a value check the following:

- a) Check accuracy of entered length and weight data, amend as required.
- b) Is the wire/cable stainless steel. If yes, has the responder been attached to the wire.
- c) Is the cable in free space between the two node points. If not use a temporary bridge to form a shorter length between the nodes (and key in the new length).
- d) The end fixtures/anchorages may have influenced the frequency response of the wire/cable putting it outside the frequency spectrum of the DIGIFORCE®. Alternative frequency spectrums are available - contact the manufacturer for details.

**WARNING: the DIGIFORCE® contains a magnet and should not be used or stored in the proximity of a magnetic sensitive material.**

7. The DIGIFORCE® can store and recall up to five separate lengths and associated weights. This facility is useful where readings are repeatedly taken from the same length/weight wires.

**To store a length/weight:**

When the display reads ENTER LENGTH use the backspace key to enter 01.00 then press the scroll key to tell the unit the value must be stored. (If this is the first time a length is being stored in this position the display will still read 01.00). Use the back space key and enter the length to be stored.

Press → . Display will read xxxxg/m.

Using the backspace key enter the associated length to be stored. Press → and continue from 4 above or press reset and store another length and weight. This time enter 02.00 and scroll when display reads ENTER LENGTH.

Up to 5 length/weight combinations can be stored in this manner.

**To recall a length/weight:**

When the display reads ENTER LENGTH use the backspace key to enter the position of the length to be recalled (i.e. 01.00 or 02.00 or 03.00 etc) then press scroll. The stored length will be recalled and the reading can be taken by proceeding as normal.

If the stored length/weight values are changed when they have been recalled the new values will be automatically stored at that position.

- If the weight or length remains the same for consecutive tests pressing → enables the user to fast forward without entering this data again.
- The backspace key ← can be used at any time to erase incorrect data entry.
- Pressing the reset key at any time reverts to the start of the programme.
- Pressing the button with the LIGHT SYMBOL illuminates the display back-light. (Excessive use will rapidly drain the battery).
- Pressing the scroll key enables the user to review logged data. Press → or ← to scroll through the data. Press the reset key to return to the start.
- The DIGIFORCE® will switch off automatically if no key is pressed for 1.75 minutes.

**Dropping the DIGIFORCE® can compromise the accuracy of the readings.**

**DIGIFORCE® is supplied with a test certificate which should be renewed annually.**

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## DOWNLOADING DATA FROM THE DIGIFORCE®

The logged data can be downloaded to a PC by connecting from the RS232 port of the DIGIFORCE® (located beneath the battery cover). You can use either a standard 9-pin serial port via the supplied cable, or alternatively you can use a USB port. A special adapter is provided for connection to a USB port, the supplied software CD containing the USB driver software must be run before attempting to connect to the Digiforce – instructions are shown in the manual provided with the CD.

Important: Before proceeding, please ensure that you have connected the Digiforce to the PC via your chosen method (and installed the USB driver if you are using the adapter) and turned the Digiforce on.

To connect to the Digiforce using Hyper Terminal (please skip to step 3 if you already got a Digiforce session):

1. Open Hyper Terminal on your PC (Start Menu/Programs/Accessories/Communications/Hyper Terminal)
  2. Set up Hyper Terminal session file:
    - **Name:** e.g. 'digi' This is what the file containing your connection details will be called. You will use to this file to connect quickly to the Digiforce when downloading in future.
    - Press OK
    - **Connect to:**  
In the bottom box ('Connect using') choose COM1 if using the serial port cable or COM3 if using the USB adaptor.
    - Press OK
    - **Port Settings**

i. Bits per second	19200
ii. Data Bits	8
iii. Parity	None
iv. Stop Bits	1
v. Flow Control	None
    - Press OK
    - Press any key on your keyboard. This should bring up a Digiforce menu on-screen with options numbered 1 to 5.
    - Click 'File' on the top menu bar and then select 'Save As...'. You must then select your preferred folder for saving the Digiforce connection file in (you may want to choose 'Desktop' as your saving location if you will be downloading regularly).
  3. Downloading data from the DIGIFORCE®
    - If you have not already connected for the first time as described above, you can either double-click the connection file that you saved in part 2 (Hyper Terminal will open automatically), or alternatively you can use the File > Open command from the top menu bar within Hyper Terminal to locate and open your Digiforce connection file.
    - Press any key on your computer board. The DIGIFORCE® display will read "serial port active" and the computer will show a Menu of 1 to 5.
    - Press number 1. Press Enter. The information in the logger will be displayed showing ID No. Date, Time and measured value with engineering units.
    - If you want to save this data:
      - Return to the main menu by pressing ENTER on your computer keyboard
      - From the top menu bar choose TRANSFER
      - Choose CAPTURE TEXT
      - Choose a file name that you will use to retrieve the data at a later stage. **ALWAYS ENSURE THE FILE NAME ENDS WITH .CSV**
      - Press START
      - Press 1, followed by ENTER. All the information will be transferred to the file.
      - From the top menu bar choose TRANSFER
      - Choose CAPTURE TEXT
      - Choose STOP
  - At this point you can retrieve the file and open it in Excel.
4. Changing the engineering units between klb and kN:  
When the DIGIFORCE® menu is displayed on screen press 4. This will reconfigure the DIGIFORCE® to show future readings in the chosen units.
  5. To clear all the logged data in the DIGIFORCE press 3 and follow the on screen instructions.

**Before exiting from the Hyper Terminal programme and disconnecting the DIGIFORCE® make sure that the DIGIFORCE® has either switched itself off or has been returned to normal mode by selecting 5 at the Menu prompt (in this case the DIGIFORCE® display will read LOG?)**